

that the first of these is really a fern, and that the last is at any rate not a true *Ficophyllum*. The *Quercophyllum* could possibly be *Dictyophyllum*, a fern. Thus the angiospermous flora of the Fuson is not beyond suspicion, and apparently the beds may be regarded as somewhat older than the Patapsco. It would be possible to regard the Colorado material as contemporaneous with the Fuson, or somewhat older, but apparently younger than the Kootanie.

A note may be added concerning *Weichselia reticulata* (Stokes & Webb) Ward, reported from the Fuson. Seward⁷ gives a detailed drawing of the venation of a specimen from Bernissart, Belgium, and it must be said that this is rather strikingly different from the venation of the pinnules of the Black Hills plant, as shown in Ward's report. It may be, therefore, that our Lower Cretaceous plant is a distinct species. Seward remarks on the absence of fructification in specimens of *Weichselia*, and suggests that it may not be a true fern, but Zeiller,⁸ recording specimens from Peru, states that he found fertile fronds, and that the plant is really a fern, perhaps a member of the Marattiaceae.

BOTANY.—*Inophloeum*, a new genus of the mulberry family.

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Under the name *Olmedia? armata* Miquel described briefly in 1854 a remarkable moraceous tree, a meager specimen of which was collected by Seemann on the Cupica River in the Colombian Darien. That he remained in doubt as to the proper place of the species is shown by the question mark following the generic name and by the following remark preceding the description: "Valdopere dolendum, stirpem admodum memorabilem ex unico parvulo ramulo vix certe definiendam nec apte describendam esse."¹

In the course of the botanical survey of Panama I have collected specimens of the same tree at several places in the forests to the east of the Canal, and from a specimen of the bark in the

⁷ Fossil Plants, 2: 495. 1910.

⁸ Compt. Rend., Acad. Sci. (Paris), June 6, 1910.

¹ In Seemann, Bot. Voy. Herald, 196.

Museum of the National Institute at Panama City it may be inferred that its area extends to the westward as far as the Coclé Mountains, on the Atlantic water-shed.²

Unfortunately, though the material now at hand is more copious, it hardly throws more light on the systematic position of the tree under consideration, because, notwithstanding strenuous efforts, I have been unable to obtain specimens of the male inflorescences. It is obvious, however, that this species cannot continue figuring under *Obmedia*, which is characterized by having its female flowers single in a many-bracteate, more or less loose involucre, while in the former these are in clusters of 4 or more, connate, and with the receptacle bractless, or the bracts coalescent so as to be singled out only with difficulty, except for an occasional free tip. The next possible genus would be *Castilla*, which, however, differs in having the many-flowered, cuplike receptacles provided with several rows of imbricate bractlets, and in the pulpous mesocarp of the nutlets.

The aculeate limbs, bracts, petioles, and main nerves of the leaves and the habit of the tree are secondary characters which may be of some weight in justifying the recognition of this species under a new generic name, *Inophloeum*, which I have selected on account of the thick, fibrous bast, to which further reference will be made later.

Following are the characters of the proposed genus and a description of its only species:

***Inophloeum* Pittier, gen. nov.**

Flores dioici. Masc. ignoti. Fem.: Receptaculum pauciflorum obsolete bracteatum, vel bracteae confertim coalescentes. Perianthia crassa, tubulosa basi inter se connata, apice libera, 4-dentata. Ovarium semiinferum uniloculare, ovulo unico ex apice cavitatis pendulo anatrope. Stylus brevis, crassus, inclusus, stigmatibus 2 brevibus angustis acutis. Nucula perigonio concrecente coriaceo obtecta.—Arbor armata, foliis distichis 3-nerviis integerrimis, stipulis amplexicaulibus aculeatis, inflorescentiis axillaribus, receptaculis parvis cum perianthiis concrecentibus. Species unica panamensis.

² If I remember correctly, the specimen, consisting of a large piece of bark made into a garment, is labelled: "Vestido de un Indio de Penonomé, hecho de la corteza de una palmera," which, translated, means: "Clothing of a Penonomé Indian, made from the bark of a palm." This label had been written by a Dr (?) Marquis, professor of botany and author of an extensive and extraordinary paper on the palms of Panama!

Inophloeum armatum (Miquel) Pittier.

Olmedia? *armata* Miquel in Seemann, Bot. Voy. Herald, 196. 1854.

Arbor medioeris, ramulis, petiolis, costa foliorum subtus, stipulisque aculeatis, foliis distichis, coriaceis, petiolo crasso subtereto laminis lato-ovatis, obliquis, basi rotundatis vel subcuneatis apice obtusiusculo-apiculatis, glabris, utrinque 7-8-costatis, costis subtus prominentibus, stipulis convolutis, subspathaceis, cicatricem obliquam circularem reliquens; receptaculis foemineis axillaribus, 3-7-floribus, perianthio ovoideo-tubuloso, coriaceo, stylo incluso, stigmatibus linearibus, erectis, contiguis, fere adnatis. Bacca coriacea, et caetera ignota.

Arbor 10-20 metralis, trunco erecto, cortice crasso, sublaevi. Aculei conici, basi crassi, apice acuto, hyalino, ampulliformi, circa 3 mm. longo. Petioli 1.5-2.5 cm. longi; laminae 14-40 cm. longae, 11-25 cm. latae. Stipulae 2-2.5 cm. longae. Perianthium foemineum ca. 6 mm. longum.

PANAMA: Around Dos Bocas, Fató Valley, province of Colón, in forests, female flowers, August 16, 1911, *Pittier* 4202. Alhajuella, on the shady banks of the Chagres River, leaves only, May 25, 1911, *Pittier* 3731. Lake shore in the Gatún Valley, in forest, May, 1914, *Pittier*, without number. Around Pinogana, southern Darien, April, 1914, *Pittier*, without number.

Miquel mentions white, setulose hairs mixed with the aculei of the stipules and bracts. In our specimens such hairs, when extant, are so scarce and inconspicuous as not to be worth mention. The larger dimensions of the leaves are those given by the same author; in our specimens they are not over 25 cm. long and 18 cm. broad.

The liber of this tree is very thick and the fibers of its many layers are strong and crossed. After a convenient preparation, which consists mainly of soaking in running water for several days and a thorough beating with a wooden club to separate the outer cortical part, it is used by the Chocó, Cuná, and Guaymí Indians as the usual covering of the women, as well as for small hammocks, blankets, etc. In former times, as reported by Seemann,³ the larger pieces were made into sails for the native canoes. This use of the bark of *Inophloeum*, however, is not exclusive, others being similarly applied. For instance, it is said that in Costa Rica and Panama species of *Brosimum* and *Castilla* are treated in the same way for identical purposes, while in other parts the bark of *Ficus* species is preferred.

The known natives names of *Inophloeum armatum* are *namagua* in the Cupica district of the Colombian province of Chocó, *maragua* in Darien, and *cocuá* in the negro villages on the Atlantic coast, close to the territory of the San Blas Indians.

³ Bot. Voy. Herald, 196.